

A media pandemic: Influenza A in Portuguese newspapers

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Abstract

On April 2009, the World Health Organization declared a global pandemic alert as a consequence of the appearance of a new influenza virus, named 'Influenza A, H1N1'. In Portugal, media coverage on this disease was intense. However, as the number of deaths within Influenza A patients turned out to be much lower than the foreseen statistics of national authorities, the hypothesis of a 'media pandemic' was suggested by national opinion makers. Looking for a better understanding of the phenomenon, we conducted a study on media coverage and news sources on Influenza A in Portugal. The study of news sources on health issues is a way of understanding health information and it has been a neglected area on Health Communication. This investigation stood on the examination of 655 articles of three national newspapers, with distinct editorial criteria. The analysis considered six variables: number of sources, geographic location, genre, identification, status, and medical expertise. This task followed a quantitative methodology. The findings confirmed previous noticed trends on health information research: the power of official sources, the complexity of access to medical sources, and the lasting misunderstandings between journalists and the medical community.

Keywords: Health communication, Influenza A, Newspapers

Introduction

At the beginning of 2009, the media around the world began alerting populations for the risk of an influenza pandemic. The first reports on this subject emerged in March and they referred the appearance of a new influenza virus in Mexico. In April, the World Health Organization (WHO) officially recognized this disease and named it as *Influenza A, H1N1*, for its identification with the

common flu (known as type A) and with a particular subtype (the H1N1).

The new virus had genes of the human, avian, and swine variant, but it presented an all new combination, never observed anywhere before. Hence, specialists soon began stressing the dangers of the new flu to humans, due to its high risk of contagion and unpredictable evolution. Accordingly, the WHO declared that *Influenza A* was an international public health emergency and announced a *pandemic alert* on April (which in July had already reached maximum levels, in a risk scale of 1–6; *Portuguese National Board of Health-DGS*, alerta@dgs.pt, 29 June 2009). The possibility of a pandemic and its consequences to the world population made this a priority matter to every country's public health authorities.

Given this possibility, the world media soon began to reproduce these concerns expressed by the WHO and the national states. According to the *Gapminder Foundation* (<http://www.gapminder.org/videos/swine-flu-alert-news-death-ratio-tuberculosis/>), from April to May 2009 it was already possible to count on Google more than 250 000 news on *Influenza A*.

In Portugal, the media also followed the disease's evolution intensively. Reports of the Portuguese news coverage (Marketest, in <http://www.marktest.com>) point out that from 24 to 28 April 2009 the national televisions broadcasted 130 news related to *Influenza A*, filling 14% of the TV information. In the end of 2009, the numbers had already reached 1897 TV news.

This level of newsworthiness is uncommon in health journalism and somehow expresses the high informative value given to this matter by national media. However, this degree of importance soon began being questioned by opinion makers, given that the worst predictions about the epidemic ended up failing to meet expectations throughout 2009. In July, the Portuguese National Board of Health (DGS) reported that the pandemic could

have an unpredictable evolution, but 8700 deaths could be expected in an alarming development and 500 in a more positive scenario (*Diário de Notícias*, 18 July 2009). Yet, at the end of the year the number of deaths from *Influenza A* in Portugal did not exceed 69 (*Portuguese National Board of Health* data, 30 December 2009, in <http://www.portaldasaude.pt>). This number, which showed a disease incidence below forecast statistics, brought to light a debate on the way Portuguese media had conducted its agenda and raised the possibility of a *media pandemic*. (As an example: on the 12 July 2009, *Público* reported 'Influenza A (H1N1): "Getting this disease is not the end of the world. I have had worse flus"'; on the 20 December 2009, the news agency *Lusa* suggested that 'The media obsession about Influenza A avoided panic'.)

At the heart of this discussion was the journalists' alleged permeability to media relations activities performed by national health authorities. This thought aroused in the public sphere many concerns on the media agenda setting effect and on the consequences of the government's information management, this last assumption being the most reported cause for the persistent attention national media gave to *Influenza A*. In the mean time, the same concerns and criticisms appeared within the international media context, pointing out the WHO and the European Commission communication pressures. The power game between the media and the marketing efforts taken by public organizations became the core of the debate on the *Influenza A* campaign.

Looking for a better understanding of this debate, we studied the *Influenza A* media coverage in Portugal, during 2009, by reviewing a large corpus of newspaper articles and developing a study on the information sources used by journalists to speak on this matter. We analyzed texts from three national newspapers, chosen by their different periodicity and editorial criteria. Within these newspapers, we selected all the texts published in the main section with reference to *Influenza A*, resulting in a total collection of 655 news.

With this extensive information, we have tried to approach our research question, stated as follows: *Who were the main sources of Influenza A news coverage in Portugal?* As it is widely recognized, news sources are a main part of newsmaking. As so, their identification and characterization was seen as useful to the comprehension of *Influenza A* news construction in Portugal and to the enrichment of health journalism research in the country. Moreover, the issue of health journalism news sources has been identified as a rarely addressed topic in Health

Communication research.¹ The following section of this paper tries to characterize the scientific production in this field, having as boundaries our empirical purposes.

Key theoretical background

The main reference framework in our study is Health Communication. This is a research field within the Communication Sciences, which emerged in the 1980s (with Kreps and Thornton,² Sharf,³ and Northouse and Northouse among others). It is concerned with the powerful roles performed by human and mediated communication in healthcare delivery and health promotion.⁵ And it grew as a response to political and pragmatic interests on health promotion and disease prevention, being itself a field of convergence between Communication Sciences and Public Health.

This is an extremely broad scientific area, including the study of different levels and channels of communication, when applied to a wide variety of social contexts. According to Kreps *et al.*,⁵ the primary levels of analysis in Health Communication include intrapersonal, interpersonal, group, organizational, and social communication. In our work, we emphasize the social analysis concerned with the health information dissemination process, including investigations that seek to understand the social construction of health in news texts. This level of analysis also looks for understanding media impact on health, providing a background for social interventions in the field.⁶

Having this framework in mind and in order to support the empirical study, we began with the cross examination of Health Communication and Communication Sciences knowledge on news sources in general and on health news sources in particular. The scientific production on Health Journalism was very useful, even though this is an emerging area in Portugal. Literature within these fields reports that there are multiple news sources in the health field (as official sources, specialized sources, common citizens, among others). Those sources find in mass media channels a means to disseminate information and create social meaning, with the purpose of promoting a shared understanding on health issues. Their actions are, therefore, informative, educational, and persuasive. As every news source, they seek to influence the media agenda and the news production process, so that they can create interpretation schemes for the themes they are interested in. In order to do so, they use different public relations

or press office techniques that turn them into ‘news promoters’.⁷

This active role of health news sources has been strengthened in recent years by the use of strategic communication and marketing techniques that make easy the achievement of the public space. This action has given them a power to influence debates, agendas, and audiences, controlling the journalists’ access to information. Several studies show this increase in marketing activities by health organizations, including research institutions, hospitals, and other healthcare bodies. These sources seek to provide accessible, reliable, and specialized information as part of a strategic communication plan.^{8–10}

The need and use of marketing communication in the health sector, namely in the public health organizations, can be detected in different phenomena. Health institutions are experiencing a consumer-driven demand and as consequence they are beginning to deal with patients as ‘clients’. Health issues have become of high media interest. Public relations costs in health organizations have increased. Moreover, many communication agencies have created specialized teams in health information.^{11–14} All those factors have contributed to an impressive news coverage.

On the other side of this media coverage process, we have the media themselves. In the construction of health information, as in any other area of media interest, the role played by news sources is crucial. The newsmaking process is ‘binary’, as stated by McQuail.¹⁵ So, the relationship between journalists and news sources is essential to news production. This relationship has moments of tension, negotiation, distance, or proximity in a game that resembles a ‘dance’.¹⁶ While the news sources try to become the news ‘primary definers’,¹⁷ journalists try to find out what they want to hide.

In the health field, the standard of balanced information seems to encounter some obstacles. Access to health news sources is described as difficult by journalists. Finding sources that are willing to talk to the media and tell their ‘stories’ seems to be a tough job, as referred in a recent study by Hodgetts *et al.*¹ Therefore, building solid relationships with accessible, reliable, and credible sources becomes really important. That is why the governmental news sources or healthcare organizations (named ‘official sources’) are usually placed on the first line of contacts. They are open and are reliable news sources. The information they provide is clear and summarized. And they are proactive in communicating their ‘stories’. Furthermore, by submitting formal positions, these sources create a ‘sphere of

consensus’ that seems to ‘liberate’ the journalist from its need to access alternative voices. They are ‘primary definers’ and their statements enjoy greater acceptance because of their social status, even in controversial themes.

It should also be noticed that the number of journalists covering health topics is generally small (and this is also true for the Portuguese information landscape). According to some authors, this fact jeopardizes a more dynamic journalism and gives rise to ‘health packs’ (Dunwood and Bennett, 1988 in McAllister, 1992, p. 205).⁸ That is, ‘packages’ of information that are shared by journalists, leading to the homogeneity of topics and angles. This cooperation regarding data collection and the use of the same sources seems to facilitate the control of information by certain health organizations.

All of these peculiarities of health journalism and health media relations become more extreme on risk circumstances. *Risk communication* is the process of producing and exchanging messages between interested parts about the nature, meaning, and control of a risk situation.¹⁸ In the health field, risk communication involves the preparation of public messages to alert the population to health threats and it comprises marketing communication patterns used in emergency situations, including public health campaigns.

The urgency surrounding risk situations takes, wisely, the authorities to the media sphere. Through media they can send rapid messages to populations and benefit from their high level of repetition and redundancy. Actually, pandemic communication literature highly recommends the use of mass media channels.^{19,20} Nevertheless, some studies report the risks involved in mass media communications, as not being free from errors and contradictions.^{20,21}

Journalism and risk communication are, therefore, promoters of health news coverage within an emergency scenario. We will, now, explore this assumption through the study of news sources relating *Influenza A* in Portugal.

Empirical study

Methodology

This research is part of a wider project on health news coverage in Portugal (Lopes *et al.*, 2009).²² Its purpose is to study *Influenza A* media coverage in Portuguese newspapers, during 2009. The primary goal is the analysis of news sources through the examination of seven variables: ‘existence/absence of sources; number of quoted sources; sources’ geographic location, gender, identification, status and medical expertise’.

This research is an extensive approach, in the sense that it aims at mapping the field. Therefore, the first part of the study consists of a quantitative analysis, through univariate descriptive statistics. These options are based on the primary objective of the global research: providing an exploratory overview, before testing hypothesis on variables' association (the next step).

In 2009, *Influenza A* was selected for the analysis because of what we called the 'emergency criterion'. That year, *Público* published 260 news on *Influenza A*, *Jornal de Notícias* published 244 and *Expresso* published 51. The sum is a 655 news corpus, making it the most prevalent news in the media.

As for the selection of analysis units, we opted for non-probabilistic sampling. Therefore, we chose newspapers (putting TV, radio and 'online' aside, for now) because it was more convenient. Given the available resources at this stage, data access is one of the most relevant criteria. The option for the general press is justified by this study's objectives, which are: to evaluate the relevance of *Influenza A* according to the media, given the number of news written on this topic; and to compare this results against other news in Portugal, on that same period of time. For that reason, the specialized press would be inadequate as a unit of analysis. As for the choice of *Expresso*, *Público*, and *Jornal de Notícias* (a weekly newspaper and two daily newspapers), this is typical cases' sampling. By choosing different types of newspapers we are pointing out to the implicit hypothesis that there may be differences in the way daily and weekly newspapers treat information. The same applies to their editorial orientation: popular or broadsheet. However, at this stage, we did not study this hypothesis.

Findings: who talks about Influenza A in the Portuguese newspapers?

After this extensive analysis, we can state that almost all newspaper articles dealing with *Influenza A* (in our sample) present its information sources. In our study, more than three quarters of the sources are identified (Table 1). There is a special care in pointing out names and professional

status of people, documents' origins, mass media news, websites, or blogs. There are not many unidentified news sources and journalists almost never chose the so-called 'anonymous sources'. However, there is a small percentage of unidentified sources whose names we do not know but who represent an institution or body (as the Ministry of Health, a hospital, or others).

In *Expresso* and *Público* nearly half of the articles use at least four sources. In *Jornal de Notícias* journalists quote a smaller number of sources: more than half the texts (58.6%) have one or two news subsidiaries. Mostly of medium size, the news stories do not make room for a remarkable plurality of voices.

Actually, there are not many actors who comment on the information presented. In this 'news sources economics' it should be noticed a tendency to hear the same people. Going through the newspaper articles that, throughout 2009, addressed *Influenza A*, it can be said that the number of cited sources is substantial. But this quantitative analysis must be balanced with a qualitative examination, since the articles repeat a significant part of its sources. As for official news sources, for example, there is a trend to look for the Minister of Health, the Health Secretary of State, and the head or vice-head of the Portuguese National Board of Health. As for specialized news sources, there is a narrow group of people from different professional groups who give opinions and information on the topic. There is a kind of a 'news sources brotherhood', with a dominant speech on what should be said or thought about *Influenza A*.

In the three analyzed newspapers, journalists mainly look for partners within the health field to talk about *Influenza A*. These news sources have diverse status (as official, specialized institutional, specialized non-institutional, common citizens as patient or family, and others) and diverse nature (human or documental).

Within the health field, official sources are the most valued, including Portuguese official entities (Table 2). At this level, the most common sources are politicians who work in the Ministry of Health and the ones in charge of the Portuguese National Board of Health. These actors are almost always present in the journalistic work, whether in the form of direct quotations or in an indirect way as information remainders. Hospital administrators or health unit directors are not very active voices on *Influenza A* news. Press officers are not much mentioned either, although their action can be perceived in repeated press conferences or press releases aimed at journalists. Relevant, also, is that the Ministry of Health felt the need to assign health

Table 1: Sources identification on *Influenza A* news.

	Expresso (%)	Público (%)	Jornal de Notícias (%)
Identified sources	77.2	80.2	77.1
Unidentified sources	18.6	19.4	22.8
Anonymous sources	4.2	0.4	0.1

Table 2: News sources status on *Influenza A* texts.

	News sources	Expresso (%)	Público (%)	Jornal de Notícias (%)
Health field	Official sources	30.7	35	45.5
	Specialized and institutional sources	22.3	13.5	11
	Specialized and non-institutional sources	12	7.1	7.6
	Documents	6	10.1	8.5
Out of health field	Other sources	29	33.3	27.9

specialists to speak to journalists about *Influenza A*. As so, these sources are qualified as officials. More than specialists, these sources speak on behalf of the Government. Very often, this option was interpreted by Portuguese newspapers as an attempt to control public information.

The control of the situation went so far that all information was centralized in the daily evaluation briefing made by the Ministry of Health, which gave journalists the contacts of four experts able to respond their scientific doubts. (Vera Lúcia Arreigoso in Expresso, 1st of May 2009)

Regarding specialized sources, they are more valued when part of recognized organizations, as associations, unions, research centers, public institutions, among others. In this context, journalists are inclined to emphasize leading position voices. Doctors, researchers, and pharmaceutical companies were the most wanted specialized sources on the three newspapers we have analyzed.

Still within the specialized sources (institutional and non-institutional), the medical community is the one with the highest number of citations: 16.8% in *Expresso*, 10.3% in *Público*, and 8.8% in *Jornal de Notícias*. However, those sources are not always presented as experts in specific medical fields, although the percentage of identification is really high and close to the total sum of sources' quotes (15.6% in *Expresso*, 8.2% in *Público*, and 6.6% in *Jornal de Notícias*). The most requested medical fields were similar in all three newspapers, in spite of some curious options: pulmonologists, gynecologist/obstetricians, pediatricians, and public health doctors.

Documents did not emerge as very significant sources in our study. However, within this context it should be noticed that in *Influenza A* news coverage, the number of press releases quoted in the texts is higher than usual in diseases' news. *Influenza A* risk raised strong media relations

efforts by official sources in order to control the information.

It can also be stressed that both *Expresso* and *Jornal de Notícias* preferred official documents to specialized ones. And this trend is once again diverse from previous studies on media coverage of other diseases.^{22,23} In *Público* the percentage of official and specialized documents is closer. However, on a general evaluation, we can state that documental sources are mainly official. More than explaining what a pandemic is, these sources looked for imposing political actions on the disease.

Outside the health field, journalists did not use many other sources, although there are two groups that stand out: one connected to the business area and other linked to the political arena. Both groups had a remarkable presence within the voices speaking on *Influenza A*. The value journalists gave to other media as news sources (newspapers, news agencies, TV channels, among others) should also be highlighted, which emphasizes the circular process of information referred by Pierre Bourdieu.²⁴

If there are some groups with easy access to media channels, others seem to be part of a huge *spiral of silence*. Within the official sources, hospital administrators and health unit directors were not valued by newspapers, in 2009. As for specialized sources, there is a noticeable depreciation of nurses in every newspaper we analyzed. While general media were highly valuable news source for journalists, specialized sites, and blogs were not very helpful. At least they did not have enough strength to generate a quote. The same happened with press officers within the health field; they are not quoted very often, but their presence is perceived in the preparation of events promoting *Influenza A* prevention (we refer to press conferences, seminars, promotion of vaccinations, among others).

Nevertheless, among these silent voices there is one worth emphasizing: the patient or the common citizen who is or might be carrying the H1N1 virus. Daily newspapers did not pay them much attention. In *Público*, this group is represented

in 4.4%; 5.3% in *Jornal de Notícias*. In *Expresso*, that percentage grows to 12.7% because this newspaper has a higher number of news reports and opens up space for hearing other news sources, especially those more testimonial-oriented. However, it is expected that newspapers look up to common citizens, who should be at the heart of its information goals.

In what concerns the news sources geography (Table 3), all the analyzed newspapers highlight the preference for national actors, especially those who represent the country (as members of the Government or public organizations administrators). This happens even when the news angle is located abroad. When the news sources are from a particular place in the country and speak with a strict connection to that place, the news priority seems to be given to the capital, Lisbon. And this happens even when the main news room is located in the north of the country, as *Jornal de Notícias*.

In the international panorama, the trend is the same: to privilege statements with a global level, regardless of their geographic location at the moment (for instance, people in charge of international institutions, like WHO). When the news sources reveal a strict bond to a certain geographic place, the European continent has the highest number of voices in the analyzed Portuguese newspapers.

Victoria Camps (1998)²⁵ believe that the twenty-first century will belong to women. If we assume that the analyzed newspapers reflect the social fabric, then this optimistic premise will not be fulfilled. The news in our sample have a higher percentage of male voices. Just one quarter of the news sources are female (Table 4). And there is a significant group of collective sources, as doctors or researchers, among others.

Perhaps it would not be difficult to support a larger balance between male and female sources, but it should be remembered that a quantitative change may not be significant in a qualitative result. We totally agree with Gilles Lipovetsky, who says that 'in a democracy, the elite selection is based on talent, competition and meritocratic equality and not in being a member of a gender community' (2000: 280).²⁶

Table 3: News sources geography in Influenza A texts.

	Expresso (%)	Público (%)	Jornal de Notícias (%)
National	80.7	67.2	73.2
International	19.3	32.8	26.8

Table 4: News sources gender in Influenza A texts.

	Expresso (%)	Público (%)	Jornal de Notícias (%)
Male sources	58.7	51.5	48.4
Female sources	23.8	28.2	24.4
Collective sources	14.1	17.1	21.7
Not known	3.2	3.2	5.5

To sum up, our findings suggest that: (a) the official sources were the dominant information suppliers on *Influenza A* news coverage in Portugal; (b) these official sources were mainly political representatives and official authorities on health issues; (c) the medical sources quoted in the news were largely consultants suggested by health authorities; and (d) those national representatives looked for influencing media agenda through the intense use of public relations techniques.

Discussion: a pandemic drawn by the media and controlled by official sources

This analysis was an extensive media study, reflecting the broad *Influenza A* media coverage in Portugal. On average, throughout 2009, the national press published one story every day on the topic, creating an impressive 'agenda-setting' effect.²⁷ This guided public opinion toward what was worth thinking and debating.

With an oversized media coverage, the need to organize information dissemination became manifest. Since the beginning, the WHO at an international level and the different State governments at a national level showed a great concern in managing risk communication. So they chose opposite strategies: the alarming scenario was favored by the WHO ('WHO alerts to the Influenza A virus', *Jornal de Notícias*, 26 April 2009; 'The world should be prepared to face the worst scenery, warns the WHO', *Público*, 29 April 2009); and Portuguese authorities preferred to call on serenity ('The first Portuguese case: Influenza A was confirmed with serenity', *Jornal de Notícias*, 5 May 2009; 'Portugal is 'perfectly ready' to face a new pandemic', *Público*, 14 June 2009).

Both organizations soon understood that it was essential for each one of them to manage communication channels with journalists as a strategy to impose the official sources interpretation of reality and control the pandemic. And the regular presence of these sources in Portuguese newspapers reinforced the dominant vision, pushing journalists

back to mere messengers in the official sources communication plans. However, time has shown us that this excessive information control by official sources, combined with the passive attitude of the media, was probably not the best strategy. Neither did the WHO tragic predictions happen nor did the Portuguese political and health authorities' statements of apparent normality protected the population from a generalized fear:

The number of calls to 'Saúde 24' [the Influenza A official information call center] increases especially after the press conferences within which the Minister of Health makes a state of play on the disease's evolution in Portugal. These moments are almost always broadcasted live by TV channels. (Alexandra Campos, Público, 10th July 2009)

The dominance of official and specialized institutional sources, particularly the journalistic inclination to hear the same people within these groups, has also neutralized the visibility of other actors whose speech could be important. Their explanations and testimonials could have balanced the catastrophic discourse of the WHO or the serene pronouncements of national authorities. We refer to important professionals like doctors or nurses without administrative or political jobs, and patients or common citizens who feared or went through this disease. But they were put aside, marginalized.

The *silence spiral* theory by Noelle-Neumann²⁸ had already shown this finding of great relevance: mass media operate in a *spiral* that is they focus on the views they think are dominant, putting aside (in *silence*) those who do not have access to media discourse.

On the 21 June 2009, when the media were still reporting what the WHO had decreed to be a pandemic, *Público* published an extensive article with the headline: 'Influenza A? That is a Government's invention!' This sentence was not said in Portugal. It belonged to a Mexican citizen from Riviera Maia whose intention became more explicit in the text: 'It is a lie from the Government (...), otherwise why would we not have sick or dead people here?' The statements are certainly overwhelming, but over a year after that they carry with them worrying signs, especially aimed at the journalistic class. Journalists uncritically followed the official sources speech, all together generating a *media pandemic*. Because no one dared to break the supremacy of a dominant speech, the media spread it without making use of the contradictory principle.

In summary, our study reinforced the theory on the media and the official sources' role in health risk communication processes. Here are some of the main ideas presented by scientific literature in Health Communication that have been strengthened by the *Influenza A* study: (1) media are key communication channels in public health risk situations; (2) health journalism shows a great dependency on official and specialized sources; and (3) citizens are the weakest link in health risk situations because they are at the mercy of this power game between journalists and official sources.

Conclusions: the impact on public health organizations management

International public health organizations have been giving much attention in recent years to the possibility of a pandemic threat potentially resulting in massive deaths, hospitalizations, and costs. In addition, many researchers have been discussing the urgency of developing a systematic approach for risk communication in order to improve health information about the public vulnerabilities.¹³ It has been argued that risk communication frames public perceptions and that those perceptions have a direct impact in the way people deal with a threat.

Risk communication is, therefore, widely perceived as an important instrument to carry out public health policy. In a pandemic risk scenario, events seem to be largely dependent on the efficiency of a risk communication plan. Communication mistakes may lead to an inadequate protection of the population, as communication efforts must educate, inform, motivate for protection, build trust in authorities, and avoid rumors. During a pandemic situation, communication activities can enlarge the audience's ability to act as an effective partner, promote contention, decrease opposition, and encourage recovery.

In Portugal, media advocacy was understood as a crucial instrument to sustain an alleged influenza pandemic, and this was one of the most important communication techniques used to disseminate information and promote trust within the population (along with advertising campaigns). However, the use of this strategy by public health organizations was disoriented. There was an overvaluation of the problem with no match in the number of hospitalizations or deaths. There was an excess of media promotion efforts without really controlling the panic. There was an overload of information compromising media freedom of speech. There was an overconfident/over reassuring message orientation that people found alarming.

And most of all, Portuguese citizens felt deceived what can affect future epidemic campaigns.

Within this context, it seems critical the development of a risk communication approach by public health organizations in the country. This approach should consider the need to manage an adequate balance between the release of information and the risk to promote sensationalism, especially when we are dealing with the mass media. Epidemiological communication attends to scientific facts; risk communication deals with controlling health threats, whereas news reporting is concerned with informing the public space. Promoting the equilibrium within such puzzle is, therefore, a difficult task for public health organizations, also involved with political issues.

However, the *Influenza A* case should have an impact on the way these organizations deal with public health threats. Regarding media relations, our study can be useful on the evaluation of strategies, techniques, and consequences; it can allow the development of a series of public health information principles in a risk contexts. Here we present some ideas to the development of those principles: (a) media relations main goal, on a risk scenario, is to provide relevant information to the populations; (b) the relationship with the media should be balanced to protect citizens' rights; (c) health promoters should carefully attend to how the information is disseminated to the press in order to avoid sensationalizing health threats; (d) more training should be expected on the journalists side in order to increase the quality of health information delivered by the media; (e) public health professionals should use the full range of health media strategies to eliminate disparities; and (f) the media relations messages should be combined with the community efforts in order to enhance the application of health policies.

This study illustrates how the source/journalists relationship can have a profound effect on what news are disseminated. It suggests that newspapers were more likely to use public relations information in published stories than to produce an autonomous research, and this increases public health organizations' responsibility toward the communities.

In the presence of a pandemic threat, public health organizations need to disseminate safety directives in a short period of time, seeking to avoid fatal consequences. Risk communication is, therefore, largely sender-centered in the sense that it seeks to respond to immediate public needs. Its messages tend to be less controlled and more spontaneous as time rushes. And the delivery of such sender-centered rapid messages, without allowing the media

contradictory, can originate sensational media news with an incorrect impact on risk management, by spreading fear and uncertainty. However, it is critical to obtain public support for government actions in a long term.

Our study shows that the misleading nature of risk report requires urgent attention from both public health organizations and journalists. Health organizations should find a more comprehensive approach to deal with the media, balancing the need to control the quality and accuracy of the information, with the respect toward the mass media role as public mediators. On the other hand, it is time for the media to offer a more critical analysis of the information delivered by the official health authorities, defending citizens' rights regarding health issues.

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